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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/831,555

08/14/2001

Balbir Kumar

540-311

5779

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7590

08/19/2008

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EXAMINER

WIMER, MICHAEL C

ART UNIT

PAPER NUMBER

2821

MAIL DATE

DELIVERY MODE

08/19/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* BALBIR KUMAR

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Appeal 2008-3300  
Application 09/831,555  
Technology Center 2800

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Decided: August 19, 2008

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Before TERRY J. OWENS, CATHERINE Q. TIMM, and KAREN M.  
HASTINGS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellant appeals from a rejection of claims 1-6, 13-23, 25 and 27. Claims 7, 8, 24, 26 and 28 have been canceled, and claims 9-12 stand allowed.

THE INVENTION

The Appellant claims a device and system for controlling the direction of a radiation beam. Claim 1 is illustrative:

1. A device for controlling the direction of a radiation beam,  
the device comprising:-

transmission means for transmitting the radiation beam from a  
radiation source, and

steering means for steering the radiation beam;

wherein the transmission means comprises a body of magnetic  
material having a central axis which forms an aperture through which  
the radiation beam passes, the central axis being parallel to and  
coincident with the direction of the radiation beam prior to incidence  
on the transmission means;

and wherein the steering means causes the radiation beam to  
emerge from the transmission means spatially offset relative to the  
central axis in free space in a known direction.

#### THE REFERENCES

Darbowitch	US 4,740,791	Apr. 26, 1988
Brigginshaw	GB 2 253 947 A	Sep. 23, 1992

#### THE REJECTIONS

The claims stand rejected as follows: claims 1-6 under  
35 U.S.C. § 102(b) over Brigginshaw, and claims 13-23, 25 and 27 under  
35 U.S.C. § 103 over Brigginshaw in view of Darbowitch.

#### OPINION

We affirm the Examiner's rejections.

Rejection under 35 U.S.C. § 102(b)

The Appellant argues only claim 1 (Br. 8-13; Reply Br. 1-10). We  
therefore limit our discussion to that claim. *See* 37 C.F.R. § 41.37(c)(1)(vii)

(2007). Claims 2-6 stand or fall with claim 1 from which they directly or indirectly depend.

Claim 1 requires a “steering means for steering the radiation beam”. Such means include the corresponding structure disclosed in the Appellant’s Specification and equivalents thereof. *See In re Donaldson*, 16 F.3d 1189, 1195 (Fed. Cir. 1994).

The Appellant’s Specification states that “[i]n one embodiment of the invention, the steering means is magnetic means” (Spec. 3),<sup>1</sup> and that “[i]n another embodiment, the steering means may comprise a ferrite material arranged within a solenoid so as to rotate a linearly polarised beam about the axis” (Spec. 4). The Appellant’s original Claim 1 recites “steering means (28, 30, 32, 34; 72, 72a, 72b, 73)”, where 26, 28, 30 and 32 are coils for inducing a gradient in magnetization across ferrite body 14 (Spec. 8: 18-19), 73 is a ferrite material, 72 is a solenoid coil for inducing a substantially uniform longitudinal magnetized effect on ferrite material 73, and 72a and 72b are a pair of coils spaced in a Helmholtzian coil arrangement to create a uniform longitudinal field and increase the magnetization of ferrite material 73 at the extremities of ferrite device 71 (Spec. 15:4-14). Those are the structures disclosed in the Appellant’s Specification that correspond to the claim term “steering means”.

The Appellant argues (Br. 9):

In the case of the recited “steering means,” a portion is described on page 12, lines 2-5 of the specification and identifies the “phase correcting dielectric 20 [which] changes the direction of the beam 12 so that it travels towards the reflector 64 in a direction parallel to the central axis 24.” (emphasis added). Thus a proper interpretation of

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<sup>1</sup> On pages 3-5 of the Appellant’s Specification, the lines are not numbered.

claim 1 requires that it be limited to combinations of elements which include the phase correcting dielectric which causes the beam to be both offset from and parallel to the central axis.

The Appellant's Specification does not indicate that phase correcting dielectric 20 is part of the steering means, and the Appellant's original claims do not mention phase correcting dielectric 20. In fact, the Specification states that "phase correcting dielectric 20 is not essential to the invention" (Spec. 11:23). The recitation in the Appellant's original Claim 1 that the steering means which, as pointed out above, comprises either coils 28, 30, 32 and 34, or ferrite material 73 and coils 72, 72a and 72b, causes the radiation beam to emerge from the transmission means "in free space in a known direction", indicates that the known direction does not have to be the parallel direction provided by phase correcting dielectric 20 but, rather, can be that provided by either coils 28, 30, 32 and 34, or ferrite material 73 and coils 72, 72a and 72b.

Thus, in arguing that the steering means includes phase correcting dielectric 20, the Appellant is improperly reading a limitation from the Specification into the claims.

Brigginshaw discloses a microwave beam steering device comprising a ferrite block (1) having therein pairs of identical circular coils (9N, 9S; 11N, 11S) that produce a magnetic field gradient (p. 3). The ferrite block corresponds to the Appellant's transmission means, and the coils correspond to the Appellant's steering means. Brigginshaw teaches that "[m]icrowave radiation incident on the block in a direction perpendicular to the field gradient is deflected, the direction ( $\theta$ ) and extent of deflection being dependent on the magnetic field" (abstract), and that the magnetic field

preferably has two gradients in directions perpendicular to each other, thereby enabling “the direction of the beam to be controlled in azimuth as well as in elevation” (p. 2). The deflection and the control in elevation correspond to the Appellant’s spatial offset, and the direction  $\theta$  and the control in azimuth correspond to the Appellant’s known direction.<sup>2</sup>

The Appellant argues that “neither the primary reference Briggenshaw [sic] nor the secondary reference of Darbowitch teach any combination of structures which cause the radiation beam ‘to emerge from the transmission means spatially offset relative to the central axis in free space in a known direction’ and parallel to the central axis” (Reply Br. 4).

As pointed out above, the Appellant’s Specification does not indicate that the steering means includes phase correcting dielectric 20, which is the structure that causes the beam to emerge parallel to the central axis. What the Appellant’s claim 1 requires the steering means to be capable of doing is causing “the radiation beam to emerge from the transmission means spatially offset relative to the central axis in free space in a known direction.” As pointed out above, Brigginsshaw’s device provides that capability.

For the above reasons we are not persuaded of reversible error in the rejection of claims 1-6.

#### Rejection under 35 U.S.C. § 103

The Appellant merely argues that Darbowitch does not remedy the deficiency in Brigginsshaw as to the alleged requirement that the steering means includes a phase correcting dielectric (Br. 7; Reply Br. 8). As pointed out above, that deficiency does not exist.

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<sup>2</sup> The Appellant’s argument that Brigginsshaw’s beam is “‘bent’ into direction  $\theta$ ” (Br. 6) is consistent with this interpretation of Brigginsshaw.

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Application No. 09/831,555

Hence, we are not convinced of reversible error in the rejection of claims 13-23, 25 and 27.

#### DECISION

The rejections of claims 1-6 under 35 U.S.C. § 102(b) over Brigginsshaw, and claims 13-23, 25 and 27 under 35 U.S.C. § 103 over Brigginsshaw in view of Darbowitch are affirmed.

No time period for taking any subsequent action in connection with this appeal maybe extended under 37 C.F.R. § 1.136(a).

#### AFFIRMED

tf/ljs

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